



History of the NOAA Fisheries Large Whale Disentanglement Network

Entanglement of marine mammals in fishing gear and/or marine debris is a significant problem throughout the world's oceans. Entanglements involving humpback whales (*Megaptera novaeangliae*), North Atlantic right whales (*Eubalaena glacialis*), sperm whales (*Physeter macrocephalus*), minke whales (*Balaenoptera acutorostrata*), fin whales (*B. physalus*), sei whales (*B. borealis*) and blue whales (*B. musculus*) have been reported along the eastern seaboard of the United States and Canada. NOAA Fisheries Service, in cooperation with the Canadian Department of Fisheries and Oceans, and the United States Coast Guard recognize the need to protect endangered marine animals, in the waters of the United States and Maritimes Region of Canada.

Prior to the mid 1980's, entangled large whales were primarily seen on the east coast of the United States by fisherman tending to their gear. The entanglement problem became more widely known as a few species (minke, humpback, and the North Atlantic right whale) washed ashore with either gear on the carcass or an indication of a previous entanglement. The volunteer marine animal stranding networks, the only organizations at the time involved with marine animal rescues, were ill equipped to safely handle free swimming live entanglements. It became apparent that something needed to be done to assist the entangled whales.

In 1984 the Provincetown Center for Coastal Studies (PCCS) in partnership with NOAA Fisheries Service developed a technique for disentangling free-swimming large whales from potentially life threatening entanglements. The technique known as "kegging," is a modified variation adopted from 19th century Yankee whalers. Yankee whalers, after harpooning a whale, would attach kegs (barrels or logs) to the harpoon line in order to slow the whale down by effectively tiring the whale. Utilizing a similar technique for entangled free swimming large whales by snapping a control line to an existing trailing entanglement line allows responders to safely work with an entangled animal.



Once the control line is established, additional buoys or floats can safely be attached to the control line to slow the whale down by increasing the whale's drag through the water. The modified "kegging" technique is designed for easy snap on/snap off release in the unfortunate event that a rescue attempt fails. In extreme cases when buoys or floats are not sufficient to slow an animal down, a sea anchor (an underwater type parachute) can be attached to the control line to slow and keep the whale at the surface so the disentanglement work can be conducted. The disentanglement team then uses specialized cutting devices and poles to release the animal of all life-threatening gear.

Over the next decade several techniques developed to safely disentangle both anchored and free swimming large whales. In 1995 NOAA Fisheries Service issued a contract to disentangle large whales with PCCS. Their experience, authorization, organization and partnership with NOAA lead to the creation of the Atlantic Large Whale Disentanglement Network (ALWDN) based on successful disentanglement efforts by many researchers and partners. Agreements were also issued between NOAA Fisheries Service and other government agencies to increase the resources available to respond to reports of entangled large whales anywhere along the eastern seaboard of the United States. Currently there are only a handful of agencies and organizations that partner with NOAA Fisheries Service on the east coast of the United States that are authorized to perform this type of dangerous activity.

The original Network vision was to provide training, equipment and authorization for regional teams to disentangle large whales independently and recover entangling gear for analysis. However the lack of consistent entanglement reporting resulted in a delay of the advancement of trained and authorized disentanglement responders. Thus, PCCS became the primary disentanglement team for the entire Network, traveling to any eastern U.S. region once a satellite buoy was deployed by local response teams to aid tracking of the whale. Local responders would then work with PCCS to gain disentanglement experience for the eventual goal of advancing within the Network and being authorized to lead a disentanglement event themselves.

Some animals can be disentangled and released before they drown, starve, or die from infection. Because of the endangered status of many of these animals, especially the North Atlantic right whale, where approximately 350-400 animals are believed to exist. However, it is recognized by many researchers that disentanglement is not the solution to the entanglement problem. This is shown by example of the North Atlantic right whale where even in the unlikely event that every entangled animal is found, reported and disentangled, there will always be some that will be missed and potentially die until preventive solutions are found.



Disentanglement of individual whales is important although a second goal of any response is the documentation and recovery of entangling gear. Any entangling gear recovered is sent to NOAA Fisheries Service gear experts for analysis and possible enforcement with NOAA Office of Law Enforcement if the gear is considered non-compliant with regional, seasonal and fishery restrictions. It is important to note the only consistent proof that fishing gear modifications for whales are working or not is through the recovery of entangling gear.

The Network has evolved many techniques and protocols that have led to numerous successful and safe disentanglement efforts. However, not all large whales react the same way to disentanglement efforts. North Atlantic right whales are the most difficult whales to disentangle because of their muscular body structure which is designed to push their large open mouth through the water while feeding. NOAA Fisheries Service and disentanglement network partners are constantly pursuing ways of improving the ability to work with North Atlantic right whales and other species by developing new equipment and techniques for restraint, and through new approaches like medically supervised chemical sedation.

Beginning in early 2006, NOAA Fisheries Service worked with state partners in the states of Florida and Georgia to expand their focus from primarily conducting aerial surveys for right whale ship mitigation to include advanced entanglement response training and authority, along with a small amount of funding to cover responses within their coastal waters. In July 2009 NOAA Fisheries Service transitioned from a single Atlantic coast wide disentanglement services contract with the PCCS to a disentanglement program with trained and authorized regional responders utilizing state partnerships. While the impetus for the transition was a reduction in funding for the disentanglement program, the outcome has been a tremendous success for the program.

Along the Atlantic seaboard, initiating in Florida, and covering north through Maine, specific states were contacted and solicited for assistance in covering marine mammal entanglement mitigation issues in their areas of coverage. These coastal states typically have marine research programs or marine law enforcement divisions that are professional biologists or mariners routinely working on the coastal waters of their state. Oftentimes, the initial reports of entangled whales observed in state waters come from these agencies and their staff members. The states were overwhelmingly supportive of a partnership with NOAA Fisheries Service to focus on large whale conservation issues within their coastal waters.

Initially the states with a history of observations of entangled whales were approached to ensure that an adequate capacity to respond to



any reports of entangled whales in their areas of coverage was established. These states also have an Endangered Species Act (ESA) Section 6 agreement in place with NOAA Fisheries Service that allows for conserving endangered and threatened species in their territorial waters. Through this agreement NOAA Fisheries Service is authorized to provide federal assistance to support development and implementation of the State's conservation program. These Section 6 agreements have proven efficient mechanisms to facilitate the transfer of funds from NOAA Fisheries Service to our state partners for conservation activities. Unlike contracts, whose funds have a finite lifespan, typically Section 6 funds can roll over from year to year until the funds are exhausted. This is a fairly important aspect since entanglements (and strandings) are unplanned and can be infrequent activities.

Currently, the Atlantic coastal states that have Section 6 agreements with NOAA Fisheries Service and have whale disentanglement response training and authority are: Florida, Georgia, Massachusetts, and Maine. Other states that are being considered for program expansion are: South Carolina, North Carolina, Virginia, New York, and Rhode Island.